



## CHAPTER 2

# Sustainable Communities Strategy— A Framework for the Future

*San Diego Forward: The 2021 Regional Plan (2021 Regional Plan) envisions a transportation system that is **fast, fair, and clean**, as well as a region that is resilient to economic and environmental changes.*

**The 2021 Regional Plan’s goals are straightforward and ambitious:**

### **fast**

The efficient movement of people and goods

### **fair**

Access to affordable, reliable, and safe mobility options for everyone

### **clean**

Healthier air and reduced greenhouse gas (GHG) emissions regionwide

Achieving our goals requires regional coordination and partnerships. A package of projects, policies, and programs will be organized and implemented around three core strategies:

### **Invest in a reimagined transportation system**

Build a network and fund services that include multimodal roadways; an expanded network of fast, frequent, and low-cost transit; 21st-century technology that manages the entire transportation system and connects people to on-demand services; and zero-emission options for vehicles and micromobility

### **Incentivize sustainable growth and development**

Collaborate with local jurisdictions and fund programs to accelerate housing production while also addressing equity, climate resilience, and mobility.

### **Implement innovative demand and system management**

Reduce solo driving and congestion through increased remote work, carsharing, vanpooling, pricing strategies, and parking-management programs that leverage partnerships and technology.

## Sustainable Communities Strategy

The 2021 Regional Plan includes a Sustainable Communities Strategy (SCS), as required by California Senate Bill 375 (Steinberg, 2008) (SB 375), for the San Diego region. This SCS describes coordinated transportation and land use planning that exceeds the state's target for reducing per capita GHG emissions set by the California Air Resources Board. The state-mandated target is a 19% reduction—compared with 2005—in per capita GHG emissions from cars and light-duty trucks by 2035. The 2021 Regional Plan achieves a 20% reduction by then.

The 2021 Regional Plan also puts forth a forecasted development pattern that is driven by regional goals for sustainability, mobility, housing affordability, and economic prosperity. SB 375 requires the SCS to include a pattern for forecasted growth and development that accomplishes the following

1. When combined with the transportation network, the SCS will achieve the regional GHG emission-reduction targets.
2. The SCS accommodates the Regional Housing Needs Assessment (RHNA) Determination.
3. The SCS utilizes the most recent planning assumptions.

The SCS uses areas in the region called Mobility Hubs to concentrate future development. Mobility Hubs are communities with high concentrations of people, destinations, and travel choices. They offer on-demand travel options and supporting infrastructure that enhance connections to high-quality Transit Leap services, while also helping people make short trips to local destinations around the community using Flexible Fleets. Mobility Hubs can span one, two, or a few miles based on community characteristics, and they are uniquely designed to fulfill a variety of travel needs while strengthening a sense of place. In the SCS land use pattern, forecasted growth for housing and jobs are within these areas of the region. Additionally, this SCS land use pattern identifies areas within the region that are sufficient to house the 6th Cycle RHNA Plan allocations.

**Appendix D** provides additional SCS documentation for the 2021 Regional Plan. **Appendix F** discusses the Regional Growth Forecast and provides additional information about the SCS land use pattern.



## Air Pollution Exposure Reduction Strategies

California Assembly Bill 805 (Gonzalez Fletcher, 2017) (Chapter 658, Statutes of 2017) requires our Regional Plan to identify disadvantaged communities and include transportation strategies to reduce pollution exposure within these communities. As the 2021 Regional Plan's projects, policies, and programs were developed, their benefits in relation to disadvantaged communities were considered.

**Appendix A**, Attachment 2 describes how disadvantaged communities were defined in coordination with the Social Equity Working Group and how strategies in the 2021 Regional Plan reduce pollution exposure in these areas.



## A REIMAGINED TRANSPORTATION SYSTEM

The San Diego region is at a turning point. We need to address many regional transportation challenges that are deeply connected to larger societal issues that impact everyone's quality of life. These include economic and social inequities, climate change, public health, and safety. To address the many challenges that confront our region, we need a new vision for our transportation system that is built to increase individual choices for getting around. This expanded system will use technology to better connect people so they have more choices for travel and increased safety. The outcome will be more mobility options for everyone and a shift away from overloading our roadways with single-occupancy vehicles.

This vision is anchored in the 5 Big Moves, which were introduced in Chapter 1 and will be discussed in detail in this chapter. Together, the 5 Big Moves will result in a transportation system that is greater than the sum of its parts. Each of them will tackle an aspect of the total system, but the success of each will rely on the success of the others. They will be inextricably linked. Each of the 5 Big Moves is detailed here:

**Complete Corridors** will act as the backbone of the entire regional transportation system, using technology, infrastructure improvements, pricing, and connectivity to support all forms of movement.

**Transit Leap** will offer people a network of high-capacity, high-speed, and high-frequency transit services that will incorporate new modes of transit while also providing improved existing services.

**Mobility Hubs** will be centers of activity where a high concentration of people, destinations, and travel choices converge. They will offer on-demand travel options and safe streets to enhance connections to high-quality transit while also making it easier for people to take short trips without needing a car.

**Flexible Fleets** will offer people a variety of on-demand, shared vehicles, including microtransit, bikeshare, scooters, and other modes of transportation that will connect them to transit and make travel easy within Mobility Hubs.

**Next Operating System (Next OS)** will be the “brain” of the transportation system—an integrated digital platform that ties the transportation system together. Next OS will enable the transportation system to be managed in real time so that people can be connected immediately to the modes of transportation that work best for them for any given situation and at any time. Complete Corridors, Transit Leap, Mobility Hubs, and Flexible Fleets describe transformed *physical* transportation networks. Next OS will be the *digital* network that analyzes data in real time from the region's physical networks, making them all work better—more integrated, more efficient, and most of all, more responsive to people's immediate needs.

**Appendix T** details the Network Development and Performance of the 5 Big Moves.



## STRATEGIES DESIGNED TO WORK TOGETHER

Each of the 5 Big Moves is a strategy designed to accomplish certain goals, but as previously stated, each one will be closely linked with the others. Each of the 5 Big Moves will also be linked to other critical policy and program areas, such as zero-emission vehicles, land use and housing, habitat conservation, and demand management.

Flexible Fleets will be more convenient and available on demand when they are powered with Next OS technology that connects the right ride with the person who needs it. Infrastructure improvements associated with Complete Corridors and Mobility Hubs will ensure that Flexible Fleets have safe spaces to use streets and places to charge and park vehicles at key destinations.

As envisioned by Transit Leap, public transit—including buses, light rail lines, and commuter trains—will be easier to access, faster, and more convenient for people. Mobility Hubs, central locations with safe connections in neighborhoods where people live and work, will offer that accessibility. Meanwhile, Flexible Fleets will connect people to transit and other destinations within the Mobility Hub areas.

Complete Corridors will also provide people with safe and comfortable spaces to get around whether they are on foot, riding a bike, using a Flexible Fleet vehicle, or using some other mode of transportation. Complete Corridors will use Next OS technology to help people travel efficiently with real alternatives to driving alone.

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The 5 Big Moves are designed to promote the increased use of zero-emission vehicles and to encourage people to walk, ride bikes, and pursue other forms of active transportation. Safe and convenient places to park as well as charging stations for electric vehicles, e-bikes, scooters, and other electric rideables will be offered. Incentives to purchase those vehicles will also be offered. New zero-emission buses and initiatives to promote more environmentally sustainable freight vehicles will also be a priority. The result will be a cleaner and fairer transportation system.

# Complete Corridors

## Key features include:

### MANAGED LANES

Managed Lanes, such as those along the I-15 corridor, offer priority access to people using transit, carpooling, or vanpooling and are expanded to all urban and interregional highway corridors in our region, as shown in Figure 2.1. Existing infrastructure is maximized by repurposing shoulders or existing travel lanes to create Managed Lanes where shoulders, high-occupancy vehicle travel lanes, or general-purpose travel lanes exist today.

### RURAL CORRIDORS

Rural corridors provide access and connectivity for rural towns and lands to the interstate system. These roadways are improved with a focus on safety through shoulder widening, curve straightening, and technology features, such as Active Transportation and Demand Management (ATDM) and smart intersections, defined below.

### REGIONAL ARTERIAL NETWORK

Regional arterials provide access for local commuting, connecting employment and industrial centers to residential neighborhoods. The network includes operational and technological improvements, including smart infrastructure and smart intersections. The adopted Regional Bike Network supports the regional arterial network and includes both on- and off-street improvements to create a safe and comfortable space for people to walk, bike, and ride micromobility options. Figure 2.2 shows both the regional arterials and Regional Bike Network facilities.



### ACTIVE TRANSPORTATION AND DEMAND MANAGEMENT (ATDM)

ATDM enables transportation operators to change how infrastructure and services are used as traffic conditions change. As a result, existing roads can have their capacity maximized through technology instead of being physically widened or building new roadways altogether. Technology also provides people with real-time travel information to help them decide how, where, and when to travel.

### SMART INFRASTRUCTURE AND CONNECTED VEHICLES

High-speed communication networks allow data to be shared among connected vehicles, travelers' smartphones, and digitally-connected roadways. This connectivity can promote a reduction in the number of vehicle collisions, expanded capacity on the transportation network, and faster travel times, benefiting all users of the roadways including passenger vehicles, buses, and trucks.

### PRIORITY FOR TRANSIT, ACTIVE TRANSPORTATION, AND SHARED MOBILITY SERVICES

Smart intersections use sensors, connected vehicle technology, and mobility applications to facilitate communication among users, improving situational awareness, signal operations, and intersection safety. Dedicated lanes for transit and micromobility vehicles and separate space for people who walk and bike make traveling safer, faster, and more comfortable for everyone.

### CURB MANAGEMENT

Curbspace is dynamically managed to accommodate different users throughout the day. This can lead to fewer traffic jams, more efficient deliveries, less idling, and improved safety.

### ELECTRIC VEHICLE INFRASTRUCTURE

Public charging facilities for electric vehicles and hydrogen-fueled vehicles help support California's overall shift to electric vehicles, including e-bikes, electric scooters, passenger cars, goods movement vehicles, and transit vehicles.



### ENVIRONMENTAL CONSIDERATIONS

Highway projects are limited to existing footprint. Any exception will be thoroughly analyzed from an environmental and equity perspective to limit and mitigate impacts to surrounding areas. Transportation infrastructure captures and channels stormwater, improving water quality and reducing flooding. The design of transportation infrastructure plans for the anticipated impacts of continued climate change, which include a rise in sea levels, more frequent and larger wildfires, and longer and hotter heat waves. As a result, transportation infrastructure is built to be more resilient to these anticipated impacts. Cost estimates for Complete Corridor projects include funding for environmental mitigation, including biological resources mitigation.

# Transit Leap

## Key features include: NEW AND EXPANDED TRANSIT SERVICES

Figure 2.3 shows the 2050 Transit Network, which includes the following services:

### **Commuter Rail** Every 5 to 10 minutes all day

New commuter rail service with high-speed trains that are fast and convenient and serve the most traveled corridors. All day service would operate 22 hours per day and connect major residential areas with employment centers, commercial areas, and other popular destinations.

### **Light Rail** Every 7.5 to 10 minutes all day

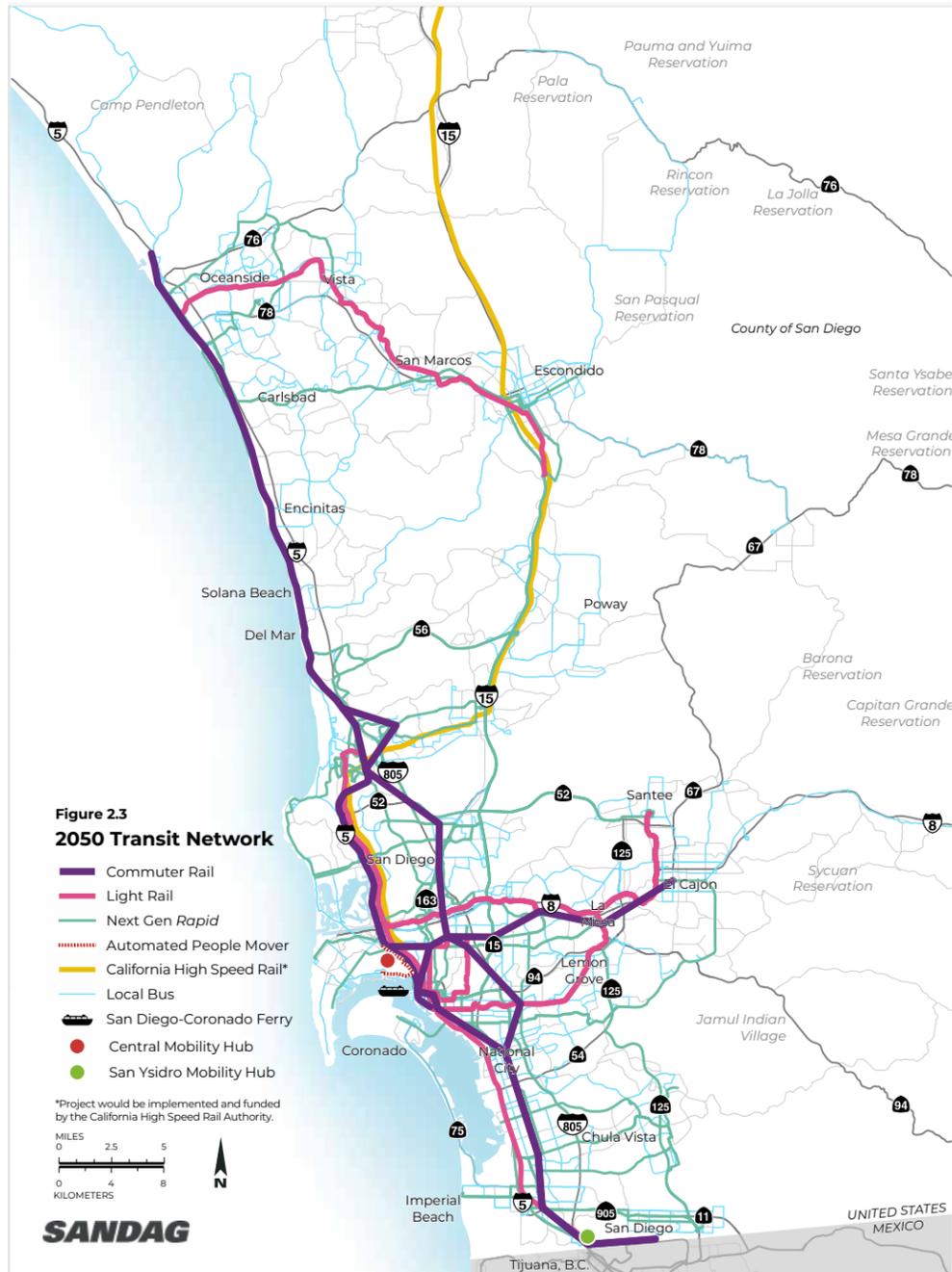
New tram services and improved light rail services with grade separations and double tracking to increase frequencies. All day service would operate up to 22 hours per day.

### **Next Gen Rapid Bus Service** Every 10 minutes all day

Faster and more reliable *Rapid* bus service with more comfortable, high-tech vehicles operating in priority lanes and making use of better signal technology. All day service would operate 20 hours per day.

### **California High-Speed Rail**

Potential alignments for the San Diego segment are shown in the 2021 Regional Plan, as reflected in the 2018 California State Rail Plan. The project would be implemented and funded by the California High Speed Rail Authority.



### **Local Buses and Microtransit Services**

Local bus service is improved with increased frequencies and microtransit (described in Flexible Fleets) offers on-demand services that extend the reach of fixed-route transit, thus completing the Transit Leap network.



### AN AFFORDABLE AND CONVENIENT SERVICE

Transit fare subsidies for people with low incomes, seniors, students, and youth make transit more affordable for more people. More frequent service that starts earlier and runs later makes transit more convenient for more people. Additional detail on service frequencies and spans is included in **Appendix A**, Attachment 1. As a near-term action, SANDAG will complete a Regional Transit Fare Impact Study, including evaluation of the transition to free public transit.

### TRANSIT PRIORITY

Transit vehicles travel in dedicated lanes along roadways and receive priority at traffic signals during peak travel hours. Transit vehicles also travel on bridges and through tunnels that are separated from other vehicle traffic.

### BETTER INTEGRATION

Transit schedules are more integrated with one another and with other transportation services so that transfers are closely timed, and as a result, people save time.

### ENVIRONMENTAL CONSIDERATIONS

New and existing transit services transition from being powered by fossil fuels to being powered by renewable sources of energy, such as electricity. This reduces GHG emissions and air pollution. Transit facilities are built to withstand the impacts of climate change, including flooding and heat waves; and incorporate features such as shade and urban greening. Cost estimates for Transit Leap projects include funding for environmental mitigation, including biological resources mitigation.



## Mobility Hubs

Mobility Hubs are whole communities that feature a convenient mix of travel choices, safer streets, and supporting amenities. Mobility Hubs help people get to and from Transit Leap services while making it easier to make shorter trips without relying on a car. A fully connected network of regional Mobility Hubs ensures seamless connections to major work, school, shopping, health care, and leisure destinations using Transit Leap and Flexible Fleets.

### Key features include:

#### SAFE STREETS

Safe Streets, which offer people wider walkways, more visible crossings, slower speeds, and protected bikeways—all of which provide safe and comfortable spaces for people of all ages and abilities to walk, bike, scoot, use a wheelchair, and more.

#### FLEXIBLE FLEETS

Flexible Fleets, which offer people shared, on-demand transportation services that provide convenient and personalized travel options for all types of trips at all times of day. Flexible Fleets offer people numerous alternatives to owning a car.

#### COMPLEMENTARY LAND USE

Complementary Land Use, which offers people a healthy mix of jobs, housing, shopping, and recreation that supports a variety of Transit Leap and Flexible Fleet services within Mobility Hubs. These communities are also key to accommodating our region's growth over the next 30 years.

### SUPPORTING AMENITIES

Supporting Amenities, which include interactive trip-planning kiosks, complimentary WiFi, mobile device charging options, electric vehicle charging, parcel delivery lockers, mobile retail services, convenient passenger loading areas, and secure parking and e-charging for bikes and other personally owned rideables.

### INTELLIGENT TRANSPORTATION SOLUTIONS

Intelligent Transportation Solutions, which include wireless electric vehicle charging, smart parking solutions, infrastructure supporting automated and connected vehicles, and dynamically managed curbs.

As shown in Figure 2.4, Mobility Hub areas encompass our region's urban core and 30 other communities throughout the region. **Appendix T**, Attachment 1 describes the propensity analysis used to define the regional Mobility Hub areas. They will be accessible via a wide variety of Transit Leap and Flexible Fleet services. Neighborhoods situated in between or beyond the regional Mobility Hub areas would also benefit from safer and more Complete Streets as well as convenient Flexible Fleet access to and from the hubs. Additionally, some Flexible Fleets can operate everywhere, given that they can be hailed on demand. With nearly half of our region's trips being three miles or less, Mobility Hubs offer a unique opportunity to transform how we move around our communities using pedal bikes, e-bikes, mopeds, and more.

## Flexible Fleets

### Key features include:

#### MICROMOBILITY

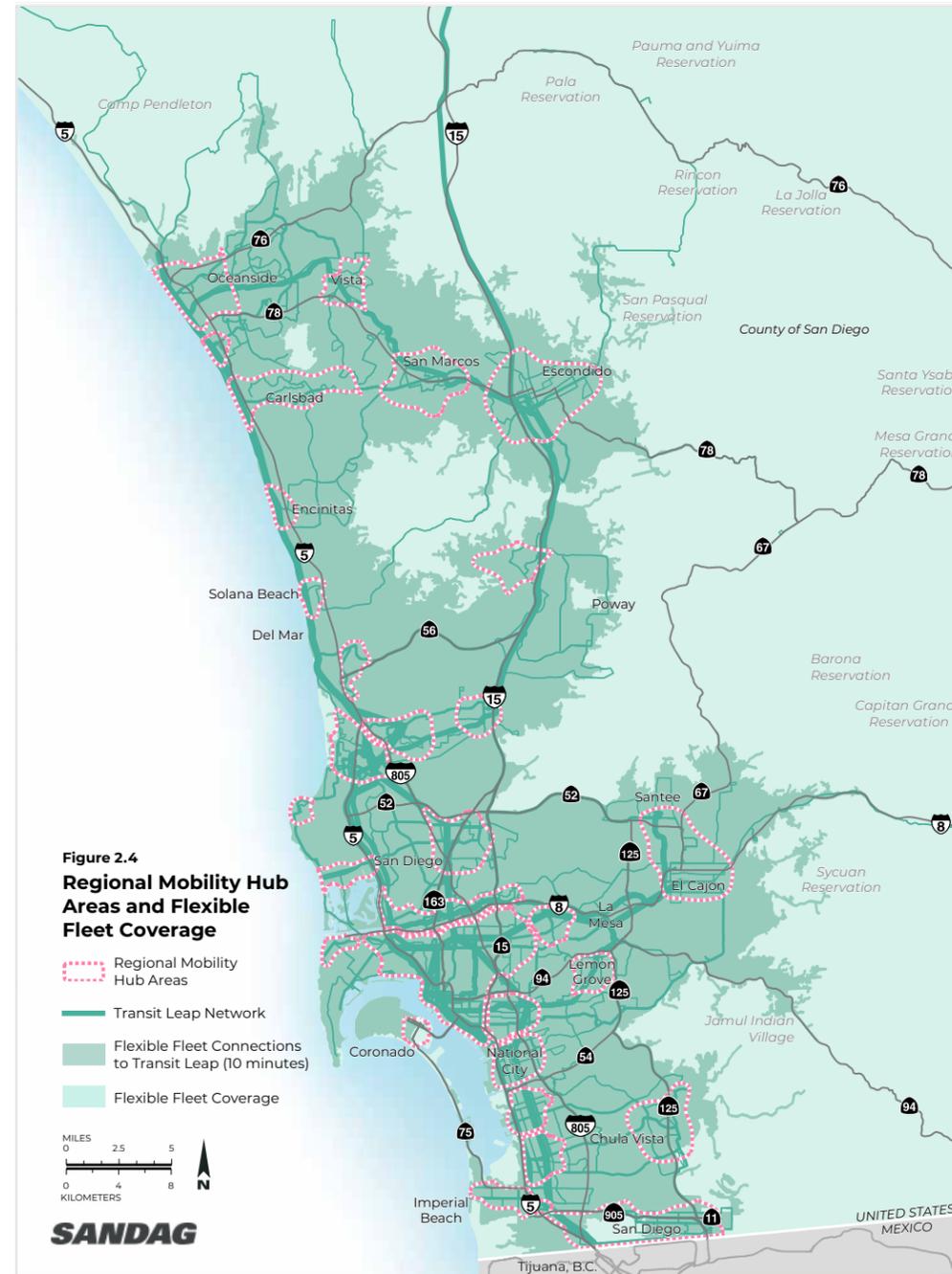
Micromobility options, which offer people small, low-speed vehicles to use for short trips within a neighborhood instead of driving a car. Micromobility devices can be personally owned or part of a shared fleet. Examples include bikes, scooters, and other rideables.

#### RIDESHARE

Rideshare options, which offer multi-passenger vehicles for people with common origins or destinations so they can share rides. Lyft Shared and Uber Pool are examples of ridehailing services that use technology to bring travelers together. These kinds of services can thrive along with traditional carpools and vanpools.

#### MICROTRANSIT

Microtransit options, which offer people smaller transit vehicles that can carry up to 15 individuals. Microtransit vehicles use technology to travel the most efficient routes between a person's doorstep and their final destination. Microtransit options can include smaller shuttles powered by electricity; people typically use these lower-speed shuttles for shorter pooled trips within a community.



## RIDEHAILING

Ridehailing options, which offer people on-demand vehicles for short- and long-distance trips. Ridehailing and carshare services will be automated in the future, and they could operate as subscription-based services. This would allow people to reserve a vehicle that best serves the needs of their trip.

## LAST-MILE DELIVERY

Last-Mile Delivery options, which offer people a variety of ways that they can have goods delivered to them. These may include vehicles that are semi- or fully automated, e-bikes, drones, and sidewalk delivery bots that deliver a range of small goods to homes and smart lockers situated throughout Mobility Hub areas. Shared vehicle trips can become more efficient by carrying passengers and goods at the same time.



## Next OS

Next OS is the digital network that maximizes the efficiency and effectiveness of the other Big Moves—Complete Corridors, Transit Leap, Mobility Hubs, and Flexible Fleets—to make the entire transportation system work at its peak potential. SANDAG would develop and operate Next OS with a focus on four smart system platforms that align with current regional project priorities.

### Smart System Platforms



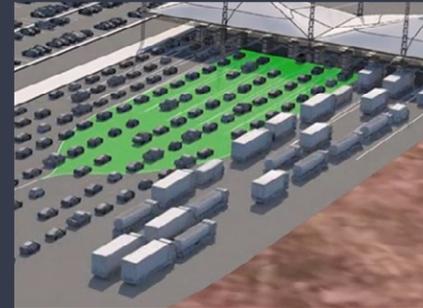
#### SMART INFRASTRUCTURE

Developing a smart intersection system for the entire region will improve safety and efficiency for freight trucks; emergency vehicles; people who walk, bike, and ride transit; and other users.



#### SMART CORRIDORS

Integrating infrastructure and services into a system that manages multiple modes of transportation will make it possible for traffic to be managed in real time; for first responders to quickly respond to incidents; and for police, fire, and other authorities to effectively coordinate emergency evacuations.



#### SMART BORDERS

A comprehensive system to manage crossborder trips will make travel and trade easier and safer at all ports of entry in the San Diego–Tijuana/ Tecate binational region.



#### SMART MOBILITY

A single smartphone app will bundle numerous mobility options with information on travel conditions and services provided by Transit Leap and Flexible Fleets. This app will enable travelers to effectively plan their trips as they use incentives and improved tools to plan, book, and pay for rides.

### Next OS Users

#### RESIDENTS AND BUSINESSES

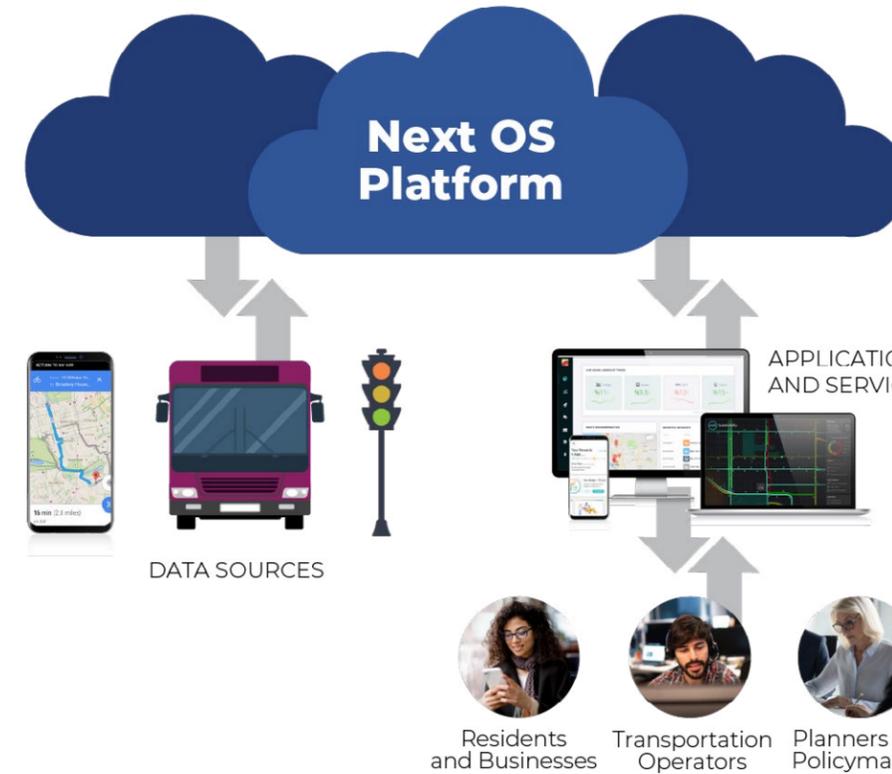
Next OS will enable people to browse, book, and pay for mobility services through travel kiosks and other applications and services.

#### TRANSPORTATION OPERATORS AND SERVICE PROVIDERS

Next OS will support the use of electronic dashboards that provide those who manage elements of the regional transportation system with real-time data. The result: optimized services for the traveling public.

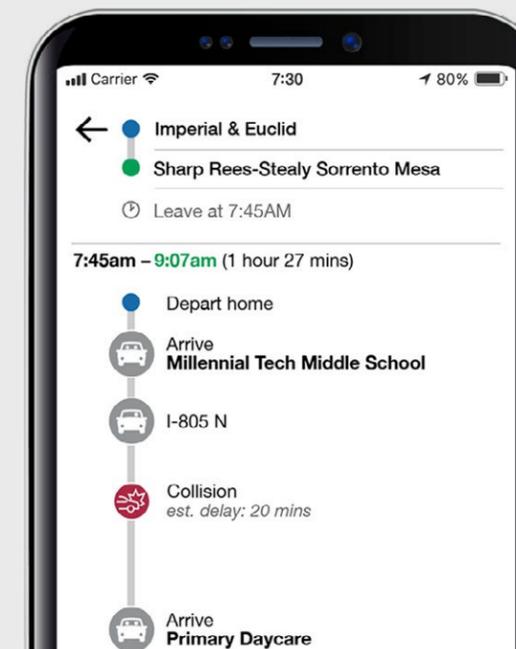
#### PLANNERS AND POLICYMAKERS

Next OS will help inform local and regional decision making with data that provide planners and policymakers with a clear perspective on how the transportation system is functioning and what improvements might be needed and where.

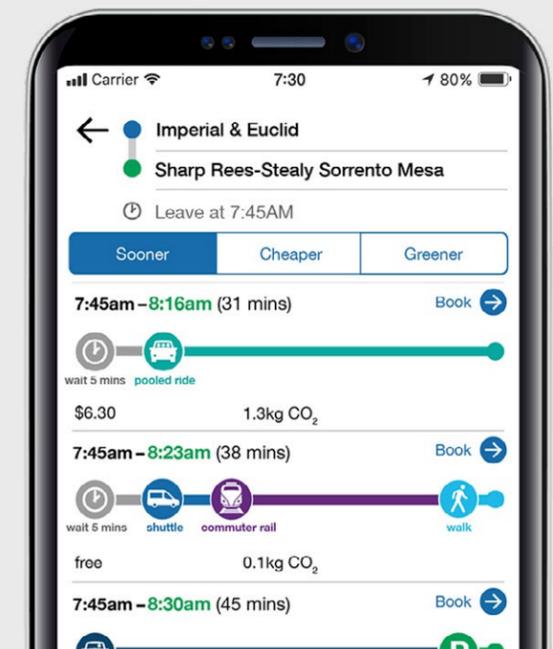


The ultimate goal of Next OS is to provide individual travelers with the information they need to travel efficiently throughout the region's transportation system and to equip local governments and mobility service providers with the data they need to better deliver transportation services, improve policies governing regional mobility, and enhance the overall experience of travelers across the region.

### Typical trip options today



### Expanded trip options with Next OS



## Active Transportation

In the San Diego region, almost **half of all trips are three miles or less**, and most every day trips are made within neighborhoods using local streets.



Whether walking, biking, using a wheelchair, or riding a scooter, Active Transportation is an accessible, equitable, and universal form of transportation. The Active Transportation network is interwoven through the 5 Big Moves. The network includes critical connections along Complete Corridors and other streets, providing people with safe and convenient ways to connect to and from Transit Leap services and many other destinations within and between Mobility Hubs. Flexible Fleets include easily accessible Active Transportation vehicles, and Next OS includes technological improvements that make it easier and safer to walk, bike, scoot, and roll.

### Key features include:

#### REGIONAL BIKE NETWORK

(part of Complete Corridors)

Initially adopted in 2010, the Regional Bike Network includes regionally significant Active Transportation facilities implemented through multifaceted street retrofits including bikeway, walking, drainage, lighting, signal, transit, and landscaping improvements. The network represents a system of Complete Street makeovers across communities to create safe space for people of all ages and abilities to get around on foot, by bike, and using other small mobility devices.

#### COMPLETE STREETS IN MOBILITY HUBS

Complete Street makeovers in Mobility Hubs will support Active Transportation and Flexible Fleets and focus on connections to Transit Leap and neighborhood destinations such as schools, shopping, dining, parks, and grocery stores.

#### PARKING AND AMENITIES

Regional Bike Network projects include convenient bike parking, and Mobility Hubs will include enhanced bike and micromobility parking with electric device charging options.

#### VISION ZERO

**A commitment to end all traffic-related deaths and serious injuries**

The aim of a regional Vision Zero policy is to protect everyone who uses the roads, especially the most vulnerable—children, seniors, individuals with disabilities, and all people who walk, bike, and ride micromobility. The 5 Big Moves will result in people having more travel options. By implementing safe street designs, slow speeds, and policies that promote safe movement, more people will feel comfortable choosing to walk, bike, and ride micromobility to get around their communities.

On average, **one person is killed or seriously injured in traffic violence every day** in the region.

In 2019, pedestrian fatalities in the United States had reached the highest level in 30 years.<sup>1</sup> Through Vision Zero programs, SANDAG will collect, analyze, and interpret crash data and work with regional and state partners to implement actions to reach Zero.

Further information on the Active Transportation program can be found in **Appendix L** and information on the California Coastal Trail is included in **Appendix W**.

<sup>1</sup> [ghsa.org/resources/pedestrians20](https://ghsa.org/resources/pedestrians20)

## Goods Movement

From the manufacturer to your doorstep, the Goods Movement system supports the local, interregional, and international movement of goods. The region's Goods Movement system will rely heavily on several of the 2021 Regional Plan's 5 Big Moves, since they will be essential for the successful transport and delivery of goods throughout our region. SANDAG also monitors and partners with agencies such as the San Diego County Regional Airport Authority (SDCRAA) and the Port of San Diego (Port) in their efforts to improve freight movement.

**Appendix Y** includes an overview of goods movement in the San Diego region and the 2021 San Diego and Imperial Counties Freight Gateway Study.

### Key features include:

Encompassing elements from each of the 5 Big Moves, key features of the Goods Movement system, highlighted below, support sustainable, innovative strategies to foster trade and reduce freight-related GHG emissions and air pollution.

#### ROADWAYS

(Intersects with Complete Corridors)

Roadway improvements will optimize our region's local, regional, interregional, and international movement through Complete Corridor elements such as Managed Lanes, bottleneck improvements, priority signals for trucks, measuring border wait times, additional dynamic truck parking, near-zero/zero-emission infrastructure, and critical bridges. Transitioning commercial vehicle fleets to near-zero/zero-emission technologies will reduce freight-related emissions while improving the quality of life in our communities.

#### BORDER SYSTEM IMPROVEMENTS

Improvements to our existing regional land ports of entry and the surrounding transportation network will facilitate the flow of crossborder commercial vehicles, which handled \$48.3 billion in goods in 2019. The region's new Otay Mesa East–Mesa de Otay II Port of Entry will provide reliable crossing times to commercial and passenger vehicles through variable tolling.

#### RAILROADS

(Intersects with Transit Leap)

Transit Leap initiatives, as they relate to rail improvements, will support freight rail operations along the region's Class I railroad and short-line railroads. Transit Leap initiatives will include track reconfigurations, bridge replacements, grade separations, and rehabilitation projects. Completing the last double-tracking projects along the Los Angeles – San Diego – San Luis Obispo (LOSSAN) Rail Corridor will provide additional rail capacity for freight operators, potentially shifting some interregional truck trips to rail moves.

#### AIR CARGO SYSTEM IMPROVEMENTS

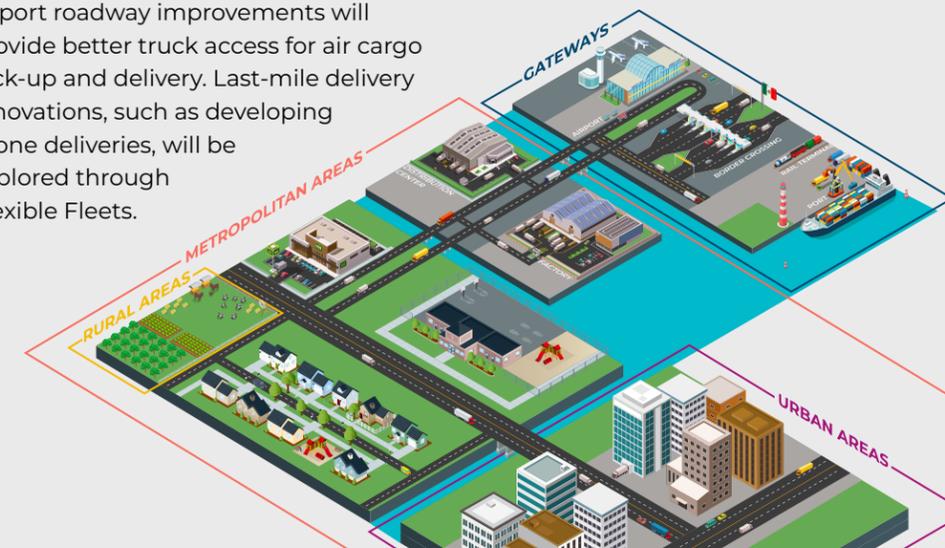
SDCRAA's improvements to cargo storage and handling facilities will support the movement of high-value and time-sensitive goods. Additional airport roadway improvements will provide better truck access for air cargo pick-up and delivery. Last-mile delivery innovations, such as developing drone deliveries, will be explored through Flexible Fleets.

#### MARITIME SYSTEM IMPROVEMENTS

The Port's improvements at the Tenth Avenue and National City Marine Terminals will optimize maritime operations, reduce emissions, and facilitate truck and rail access. Truck parking and staging opportunities at various local or state sites supporting the Port's operations will be explored. The Harbor Drive 2.0 concept of prioritized signals for trucks between the two marine terminals, coupled with near-zero/zero-emission trucks, will reduce emissions for nearby residential communities.

#### NEXT OS

The Next OS digital network will support drivers picking goods up and delivering goods to businesses and residents. Truck routing and permitting information, truck parking availability, and border wait time data will be some of the applications found within Next OS that benefit those who move goods.





## SUSTAINABLE GROWTH AND DEVELOPMENT

The 2021 Regional Plan envisions a regional pattern of growth and development that reflects smart growth, transit-oriented development, preserving natural resources and agricultural lands, and building communities that are resilient to the consequences of climate change and other environmental changes. Ensuring social equity and the availability of housing that is affordable for everyone are also top priorities. Mobility Hubs will be places of activity where many of the 2021 Regional Plan's transportation investments will come together along with strategic decisions about how we use land. Transit and other mobility options within Mobility Hubs will support surrounding communities where future housing and jobs are envisioned. As these places grow, more people will be able to get to work, school, shopping, and other destinations without having to travel long distances. Focusing growth in these areas will also help preserve the region's natural habitat areas and natural resources. This growth pattern will be an important part of making the region more resilient to the impacts of climate change, including wildfire and extreme heat. As shown in Figure 2.5, the region's major employment centers and urban core Mobility Hubs would take on the most housing and job growth in the region over the next 30 years.

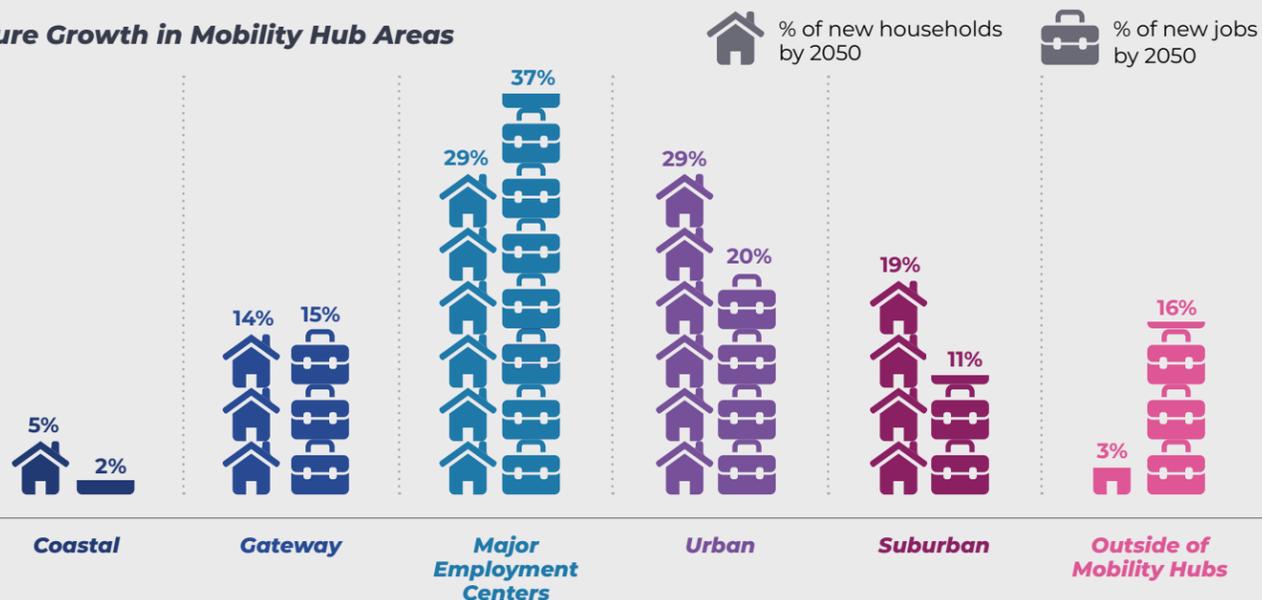
Details of the Regional Growth Forecast and Land Use Pattern are included in **Appendix F**.

**Figure 2.5**  
**Sustainable Communities Strategy Land Use Pattern Future Growth Areas**

### San Diego Region in 2050

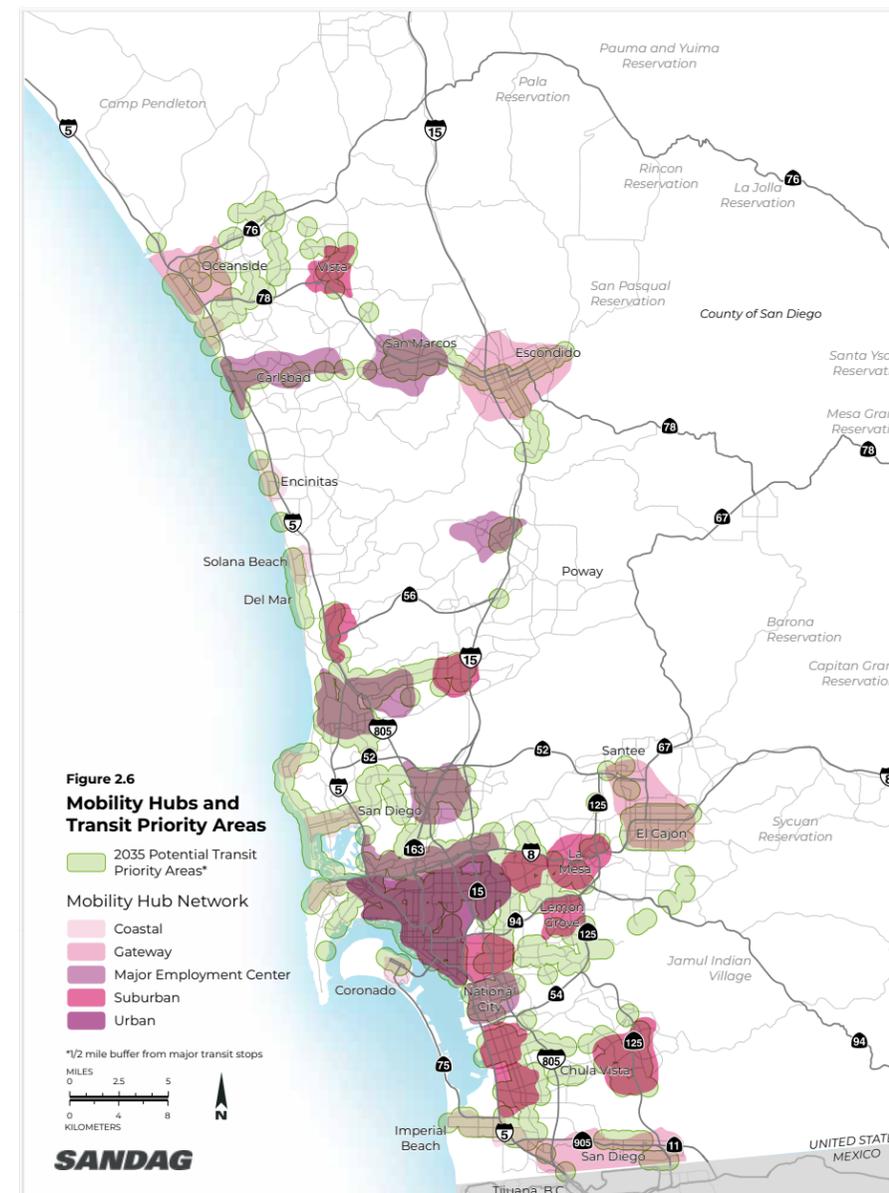
Total Projections	2016–2050 Growth Projections
Population: 3,746,073	Population: +436,563
Jobs: 2,086,318	Jobs: +439,899
Households: 1,374,840	Households: +239,991

#### Future Growth in Mobility Hub Areas



## Accelerating Sustainable Communities

Accelerating the sustainable communities envisioned in the 2021 Regional Plan requires SANDAG to leverage partnerships with cities and the County of San Diego. Land use authority is reserved for local jurisdictions under state law, and because they understand the unique needs of their communities and geographies. Mobility Hubs are general areas defined by a set of regional criteria (the analysis to define Mobility Hubs is described in **Appendix T**, Attachment 1). To refine and implement Mobility Hubs, the 2021 Regional Plan includes near-term actions to update local government grant programs, provide funds for transportation-related improvements, update Mobility Hub areas to align with latest planning assumptions, and partner with jurisdictions on planning efforts that support sustainable communities in Mobility Hub areas and Transit Priority Areas. Figure 2.6 depicts the regional Mobility Hub areas and Transit Priority Areas based on the 2035 transit network.



### Regional Mobility Hub areas are classified into the following types:

**Coastal:** popular seaside and recreational destinations for the region's residents and visitors. While scale of future development in these areas may be smaller compared with other Mobility Hubs, there is a genuine need to improve multimodal connections to these neighborhoods bordering one of the region's most precious natural resources.

**Gateway:** key entry points into the 5 Big Moves network. For example, the U.S./Mexico Border Mobility Hub offers a unique opportunity to improve the regional travel experience for people and vital goods crossing the International Border in both directions daily.

**Major Employment Center:** the region's existing top commute destinations, many of which offer mixed use development opportunities to help accommodate future growth.

**Urban Core:** includes Downtown San Diego and surrounding higher density, mixed-use residential and commercial areas—everything from Mid-City to Barrio Logan to the Midway community. The Central Mobility Hub will serve as a true "anchor" transit station within this Mobility Hub area.

**Suburban:** moderately dense residential neighborhoods spliced with some commercial destinations that are situated near Transit Leap routes.

### Transit Priority Areas

Senate Bill 743 (Steinberg, 2013) provides for streamlined environmental review for projects within Transit Priority Areas, which is an area within a half mile of a "major transit stop." A major transit stop, as defined in Public Resources Code 21064.3, is a site that contains any of the following:

- An existing rail or bus rapid transit station
- A ferry terminal served by either a bus or rail transit service
- The intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

## Habitat Conservation Vision

The San Diego region is one of the richest biodiversity areas in the United States. Due to its diverse topography, geological conditions, and moderate climate, the region contains many rare, threatened, and endangered species. Over the last three decades, the region has identified and conserved lands to protect rare, threatened, and endangered species and their habitats, while also accommodating future population growth. These habitat conservation planning efforts have also helped to improve water quality and sequester carbon.

Similar to the Mobility Hub concept, regional habitat conservation efforts have envisioned “hubs” of protected natural lands that are connected by wildlife movement corridors. This will allow the entire ecosystem to adapt to changing ecological conditions associated with climate change, and to be resilient to wildfire and invasive species. Investments identified in the 2021 Regional Plan would conserve and manage lands identified in local habitat conservation plans, mitigate impacts on habitats from transportation projects, and implement nature-based climate solutions.

**Appendix AA** of the 2021 Regional Plan describes the history and current status of the habitat conservation planning efforts in the region and sets forth a vision for future implementation. As described in **Appendix Z**, the 2021 Regional Plan is consistent with the overall goal of the California State Wildlife Action Plan.

The vision for regional habitat conservation is to **Protect, Connect, and Respect** species and their natural habitats to prevent their extinction in San Diego County:

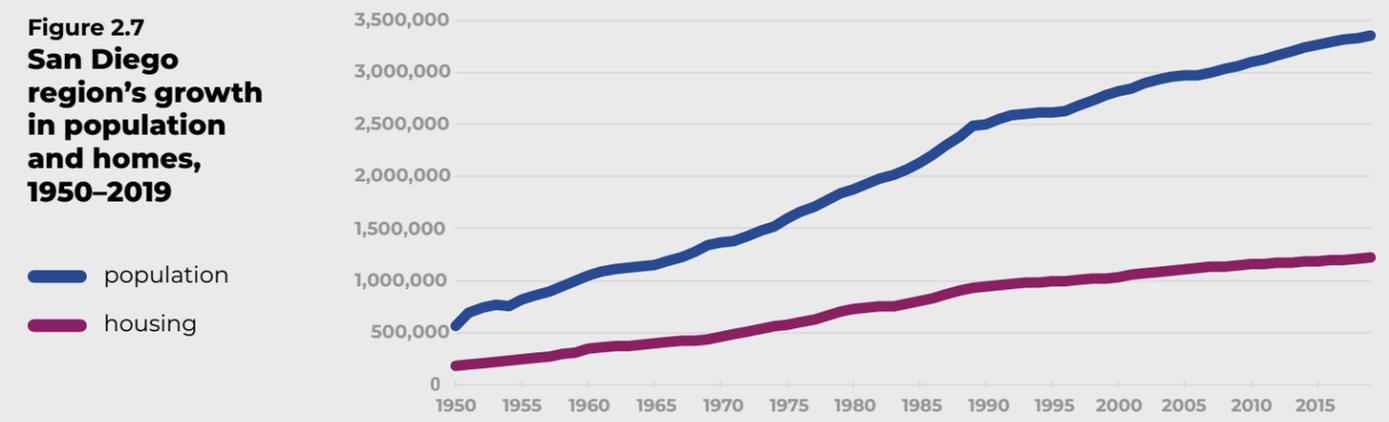
- **Protect** existing native species through the strategic acquisition, management, and monitoring of critical habitat areas identified in the regional habitat conservation plans.
- **Connect** habitat areas through wildlife corridors and other linkages, and connect people to local species and San Diego’s natural habitats by enhancing access, where appropriate, to natural habitat areas.
- **Respect** local native species and habitat. We can balance demands for recreation with the desire for intact, natural landscapes and together create a higher quality of life for everyone in San Diego. We can encourage community respect for natural lands through increased public outreach and by building awareness of San Diego’s unique biodiversity. This understanding will help the public connect to and deepen their respect for nature, furthering conservation efforts in the region.



## Regional Housing

The State of California faces a persistent housing crisis, and San Diego County is no exception. As shown in Figure 2.7, the housing supply has not kept pace with the growing population of the San Diego region, resulting in rising housing prices. More than 70% of San Diegans say that housing affordability is a big problem across the region, especially for low-income families and younger residents.

**Figure 2.7**  
**San Diego region’s growth in population and homes, 1950–2019**



Addressing the availability and affordability of housing requires action at the local, regional, and state levels. For example, cities in the San Diego region have taken steps to increase affordable housing by making the development process faster and easier. The State of California offers grants to accelerate the production of housing and has approved legislation that allows for more types of homes, such as accessory dwelling units, to be built statewide. Regionally, government agencies are considering how to better align housing policies with transportation initiatives. Both contribute substantially to the region’s cost of living, access to basic needs, and overall quality of life.

### REGIONAL HOUSING NEEDS ASSESSMENT

The RHNA, mandated by state law, quantifies the need for housing and informs land use planning efforts to identify existing and future housing needs resulting from the growth in population, jobs, and the size of households. SANDAG, as the region’s council of governments, is responsible for overseeing the RHNA process for the San Diego region.

The SANDAG Board of Directors adopted the 6th Cycle RHNA Plan on July 10, 2020, with the final housing unit allocation. The RHNA Plan furthers the objectives in state law by allocating housing to jurisdictions based on the availability of transit and jobs. This provides people with opportunities to take more trips by bus or train and live closer to where they work, reducing vehicle miles traveled (VMT) and GHG emissions. The methodology to distribute the regional housing need is designed to allocate more housing units to low- and very-low-income residents in places where this type of housing has not been available in the past. The methodology also makes low-income housing a priority in high-opportunity areas that feature better schools, more economic opportunity, and fewer environmental hazards.

The RHNA Plan informed development of the SCS land use pattern, setting forth a forecasted development pattern for the region. The SCS land use pattern identifies areas within the region sufficient to house the projection of regional housing need determined by the California Department of Housing and Community Development, considers state housing goals, includes housing unit assumptions for each jurisdiction that meet the housing unit allocations in the RHNA Plan, and prioritizes Mobility Hub areas and Smart Growth Opportunity Areas for future development.

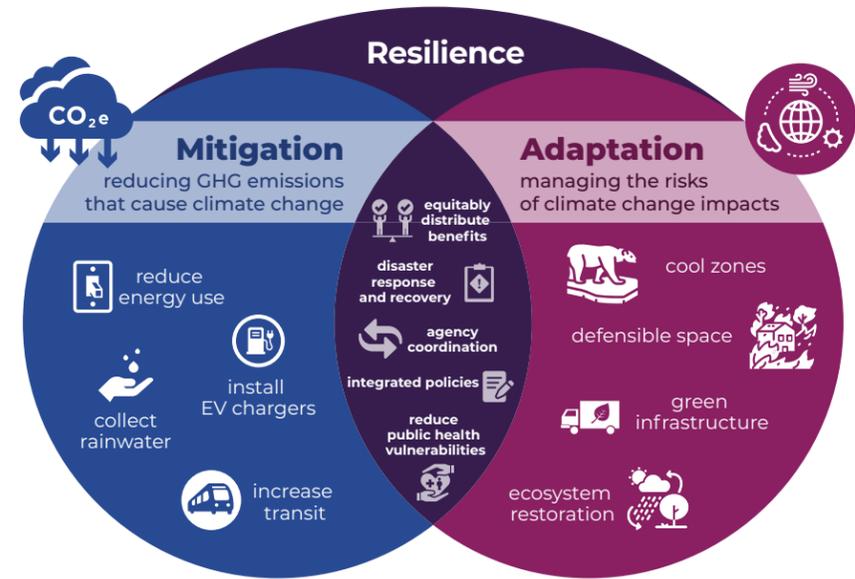
### HOUSING PROGRAM

SANDAG has begun developing a housing incentive program as an implementation measure of the 2021 Regional Plan, which will support jurisdictions as they develop and adopt policies and process improvements to accelerate the development of housing in areas with access to transit, jobs, and other amenities. The SANDAG housing incentive program will also explore ways to leverage funding from the state to provide people with more housing in our region and meet the goals of the 2021 Regional Plan.

The RHNA Plan is included in **Appendix K**.

# Climate Strategies

The San Diego region will be increasingly impacted by the consequences of climate change. These impacts will contribute to existing vulnerabilities and create new ones for our regional transportation system, as summarized in Figure 2.8. Measures to mitigate climate change and adapt to inevitable impacts will make our region more resilient. Resilience is defined as “the ability to prepare for changing conditions and withstand, respond to, and recover rapidly from disruptions” (Federal Highway Administration Order 5520).



**Figure 2.8**  
**Climate Impacts in the San Diego Region**

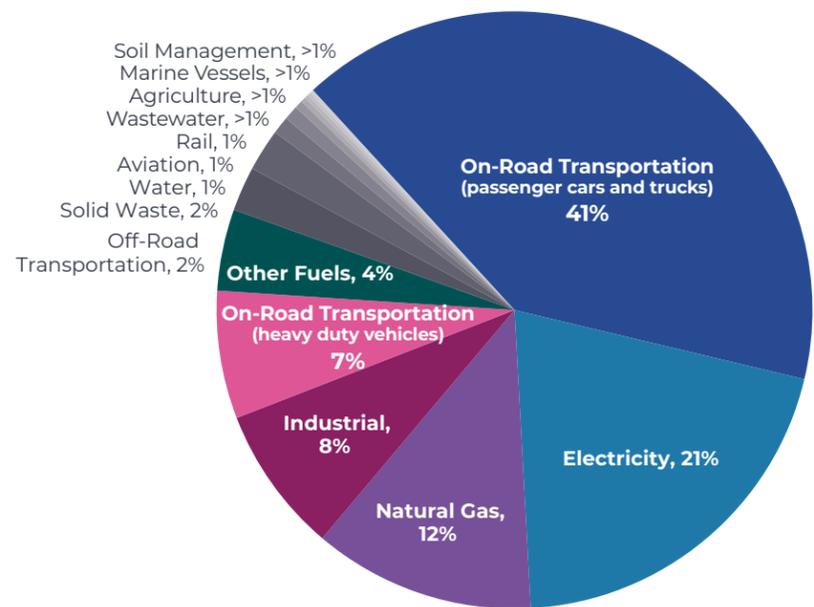
Temperature	Water	Sea-Level Rise	Wildfires	Habitat
Increase of 5–10 °F in annual average temperature by 2100; increased frequency, intensity, and duration of heat waves	Supplies of water will be highly variable, with wetter winters, drier springs, and more frequent and severe <b>droughts</b> that end with periods of <b>intense rainfall</b>	<b>2.5 feet</b> by 2050 and <b>6.6 feet</b> by 2100	Longer and less predictable fire seasons, larger and more <b>catastrophic fires</b> , and a higher number of <b>poor air quality</b> days as a result	All of these will <b>threaten</b> the health of <b>coastlines and beaches, wetlands, and plants and animals</b>

In the San Diego region, climate action planning to date has focused on reducing GHG emissions, particularly from those sectors in the Regional Greenhouse Gas Emissions Inventory, to lessen the impacts of climate change.

**Appendix X** contains the methodology document for the Regional Greenhouse Gas Emissions Inventory and Projections.

As shown in Figure 2.9, transportation is the largest source of GHG emissions in the San Diego region; in 2016, on-road light-duty vehicles accounted for 41% of emissions. Reducing emissions from all sectors is critical for the state to meet its goal of “carbon neutrality” by 2045. Implementing the 2021 Regional Plan, while also facilitating the development and implementation of local Climate Action Plans (CAPs) across our region, will help everyone—the state, SANDAG, cities, and other public agencies—achieve their climate goals.

**Figure 2.9**  
**2016 Regional Greenhouse Gas Emissions Inventory**



## CLIMATE ACTION PLANNING

In the San Diego region, 17 out of 19 local jurisdictions have adopted a Climate Action Plan. SANDAG develops technical resources, grants, and templates to support regionally consistent climate action planning. Resources include the Regional Climate Action Planning Framework (ReCAP) and the Climate Action Data Portal,<sup>2</sup> which houses GHG inventory and CAP monitoring data (“ReCAP Snapshots”) to help jurisdictions monitor progress toward CAP goals. These resources help jurisdictions use consistent approaches, methodologies, and data, while also preserving their flexibility to form their own local policies. SANDAG also facilitates coordination among jurisdictions to help them implement their CAPs. The agency also continues to explore opportunities to advance local CAP implementation through regional initiatives, such as carbon sequestration.

## CLIMATE ADAPTATION AND RESILIENCE

The ongoing impacts of climate change are challenging our region’s transportation system and regional connectivity. SANDAG and many of the region’s local jurisdictions, public agencies, and special districts are developing vulnerability assessments, climate resilience plans, and implementation strategies to identify and adapt to these challenges.

<sup>2</sup> Climate Action Data Portal: [climatedata.sandag.org/](http://climatedata.sandag.org/)

<sup>3</sup> Executive Order B-30-15 Resiliency Guidebook, Vulnerable Populations, [opr.ca.gov/docs/20180312-Vulnerable\\_Communities\\_Descriptions.pdf](http://opr.ca.gov/docs/20180312-Vulnerable_Communities_Descriptions.pdf)

Adaptation planning develops actions to manage risks and reduce vulnerabilities to the impacts of climate change. This type of planning focuses on how to best adapt to the anticipated rise in sea levels, increases in temperature, and the elevated risk of wildfires. Adaptation planning builds capacity to better prepare San Diego communities for these impacts.

**Appendix R** includes additional information on Stormwater and Resilience.

## CLIMATE EQUITY

Efforts to mitigate and adapt to the impacts of climate change and develop communities that are more resilient to these impacts must consider equity. Vulnerable communities are more at risk of experiencing the negative impacts of climate change and have fewer resources to cope with, adapt to, and recover from impacts. The disproportionate impacts of climate change that vulnerable populations face are caused by many factors, including the physical environments where people live and work and their social, political, and economic backgrounds.<sup>3</sup>

SANDAG is preparing an Adaptation Equity Guidance Document that will identify equity indicators and metrics for adaptation, as well as guide the integration of equity into adaptation and resilience planning and implementation. The Adaptation Equity Guidance Document will also include a training curriculum for local planners and decision makers.

## Priorities for Adaptation Planning

- Develop a Regional Resilience Framework for the San Diego region.
- Prioritize resilience projects in communities that are most vulnerable to climate impacts.
- Develop innovative solutions to address the need for evacuation and rapid mobility in transit corridors.
- Address vulnerabilities to the region’s transportation infrastructure.
- Protect natural lands to absorb carbon and protect communities from the impacts of climate change.
- Serve as a resource for local agencies and the general public on the impacts of climate change and how to best prepare.

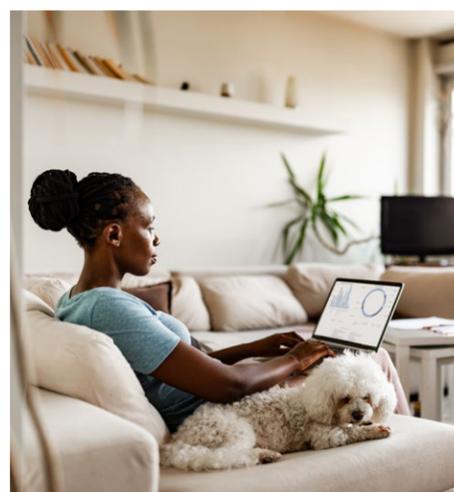


## INNOVATIVE DEMAND AND SYSTEM MANAGEMENT

Innovative demand and system management strategies are programs that encourage and support people to choose alternatives to driving alone. These alternatives include working remotely, carpooling, vanpooling, and choosing transit or active transportation. Next OS will make traditional transportation demand management strategies more effective by supporting a system that offers people incentives to choose alternatives to driving alone, facilitating integrated payment options for these alternatives, and helping planners learn and integrate results into future planning and program design.

### Impacts of COVID-19

In March 2020, the global coronavirus pandemic forced governments to issue stay-at-home orders to protect the general public and reduce the spread of disease. The abrupt closure of communities across the country has had widespread impacts on the national economy, the travel behavior of Americans, and the social well-being of people young and old. SANDAG has been closely monitoring the impacts of the COVID-19 pandemic and has generally observed an increased need to address social inequities in the region, the potential for more opportunities but also limitations for people to work remotely, and a return to previous levels of travel activity when stay-at-home orders were lifted. The experience during the pandemic has reaffirmed the need for a transportation system that offers choices for traveling around the San Diego region and the need to leverage technology in ways to improve flexibility and adaptability to future changing conditions and disruptions.



## Transportation Demand Management

The region cannot build enough capacity on its roadways to alleviate all congestion. Therefore, the 2021 Regional Plan includes transportation demand management (TDM) strategies that encourage people to use the regional transit network, an array of Flexible Fleets, and safe streets for biking, walking, and rolling. SANDAG, local jurisdictions, employers, and land developers can all play a role in implementing effective TDM solutions.

### EMPLOYER OUTREACH PROGRAM

Many TDM programs are implemented with employers because commuting to and from work generates the most daily congestion on roadways and because employers can offer policies and programs that influence their employees' commute choices. Employer policies could include commuter benefits; financial incentives; effective marketing, education, and outreach; parking-management strategies; and more flexible work schedules that offer telework options. Through iCommute, the San Diego region's TDM program, SANDAG has offered complimentary assistance to employers throughout the region for decades. However, the 2021 Regional Plan envisions a regional TDM policy that requires employers and developers to provide transportation benefits and on-site amenities that encourage people to use sustainable transportation choices. SANDAG also leads regional telework pilot programs that help local employers improve telework practices and that measure impacts of pilots on regional VMT while determining regional scalability.

### SUSTAINABLE TRANSPORTATION ENCOURAGEMENT

As the transportation network and services envisioned by the 2021 Regional Plan are brought to fruition, it is important to have marketing, education, and other creative outreach strategies to raise public awareness and encourage people to choose alternatives to driving alone. This includes longstanding bike encouragement programs, which celebrate Bike Month every May, and the SANDAG GO by BIKE brand that is used in campaigns repeated throughout the year. To encourage people to try alternatives to driving alone, the 2021 Regional Plan includes programs and grants to support pilot projects and collaborative partnerships. Projects could expand beyond traditional TDM strategies and include shared streets, shared mobility pilots, micromobility incentives, technology-based solutions, and more.



## Regional Pricing Strategy

The region's roadways are a public good, but they do not have an infinite capacity and increasing demands have been placed on the transportation system. The results have been severe and persistent congestion, air pollution and increased GHG emissions, deteriorating regional economic competitiveness, and a diminished quality of life for everyone. The Regional Pricing Strategy proposes a variety of tools to manage demands on the system, give people incentives to use alternative modes of transportation, and ensure that individuals with low incomes are not overburdened with transportation costs. These tools include:

- **Dynamic tolling on Managed Lanes:** Similar to the I-15 Managed Lane system, the region's expanded system of Managed Lanes will combine with Next OS to allow tolling rates to fluctuate depending on the time of day and the level of congestion. SANDAG partners with Caltrans to build and operate the Managed Lane system.
- **Transit fare subsidies:** Complementing the expanded transit system, transit fare subsidies will reduce the cost of transit fares and therefore will make transit a more affordable and attractive alternative to driving alone. Tailored subsidies for individuals with low incomes, youth, and seniors will make transit more accessible for those who rely on low-cost transportation. SANDAG will work with the transit operators to offer fare subsidies.
- **Parking and curb pricing:** Combined with the availability of convenient alternatives to driving alone and effective parking-management strategies, charging for parking encourages vehicular turnover and reduces congestion as drivers search for a parking spot. Better management of valuable curb space also includes pricing to encourage a rapid turnover by commercial vehicles, rideshare services, shuttles, and parcel-delivery vehicles. The result: access is maximized for a wider range of popular services. Local jurisdictions are responsible for managing parking and curb space. SANDAG will provide resources and technical support to jurisdictions in developing parking and curb pricing strategies.
- **Road usage charge:** More people are driving more fuel efficient and zero-emission vehicles, and as a result, gas tax revenues are declining. To make up for this loss in revenues and to manage congestion, California is exploring the idea of charging people who use roads. As California selects an approach for technology, collection methods, and account management, SANDAG will work with member agencies, California metropolitan planning organizations, and other stakeholders to determine how to best leverage the statewide system for a regional road usage charge that will benefit the San Diego region by improving air quality and managing congestion systemwide while generating flexible revenue for local projects.



## Our Future Success Requires Bold Action Today

The 2021 Regional Plan puts forth a long-term vision for 2050. However, projects, policies, and programs will be phased in over time to meet certain state and federal requirements. For example, by 2035 the region must demonstrate how it will reduce GHG emissions to meet targets set by the state. The 2021 Regional Plan's investments between now and 2035 were identified based on project readiness, timing of anticipated revenues, consideration of social equity, and integration of the 5 Big Moves to ensure critical connections are made as a system. Projects, programs, and policies by 2035 are centered on advancing our ability as a region to address social equity and congestion while meeting the region's GHG-reduction target. They include:

- **Making the most out of our existing transportation system** by developing a system of Managed Lanes, coupled with Next OS technology, to support the efficient movement of people and goods; increasing transit service hours and frequencies; subsidizing transit fares; and building out an extensive system of Rapid transit. The overall goal is to make transit more convenient and affordable and to increase access for historically underserved communities.
- **Advancing work on the commuter rail system** by double-tracking the LOSSAN Rail Corridor, relocating tracks off the Del Mar Bluffs, and building a critical commuter rail connection from South Bay to Sorrento Valley.
- **Investing in communities** to support mobility options and close the first/last-mile gap with Flexible Fleet pilots, Complete Street makeovers, Mobility Hub amenities, electric vehicle charging, local bike projects, and smart intersections, including the development of the Central Mobility Hub and San Ysidro Mobility Hub.
- **Supporting sustainable planning** with local programs that help make housing more affordable, improve safety, make communities more resilient to the impacts of climate change, preserve open space, and focus development in Mobility Hub and Transit Priority Areas.
- **Managing system demands** with employer-focused programs that encourage people to choose alternatives to driving alone and pricing strategies that ease congestion and enhance transportation revenues.

Details on the phasing of projects are included in **Appendix A** and **Appendix T**.

# Performance of the Regional Plan

How well does this package of projects, policies, and programs help us achieve our goals? What are the benefits to social equity populations? What are the economic benefits?

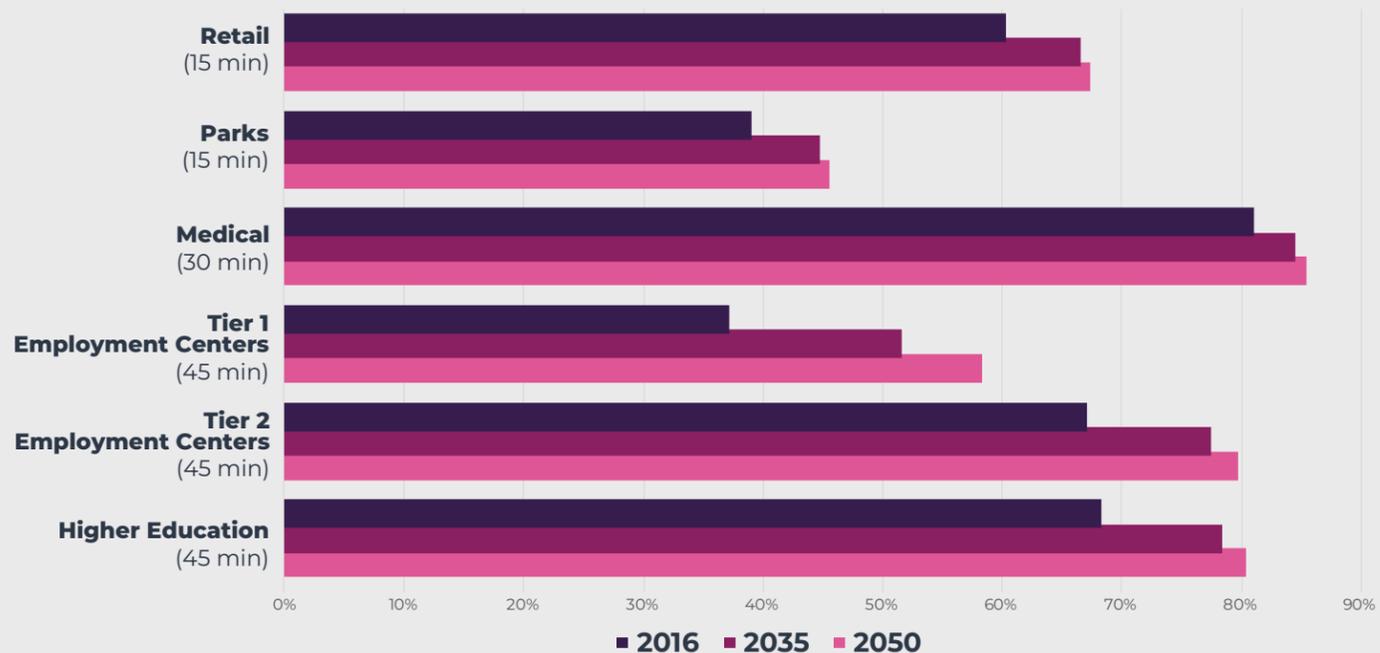
SANDAG uses computer models to understand how changes to the transportation system, land use, and new mobility services will impact our region. These models calculate travel times, trip distances, the use of different transportation options, and much more. Performance measures help structure model data for review across multiple years and between the Regional Plan network and the current network. From these models and performance measures, the future performance of the transportation system can be better understood.

## ACCESS TO BASIC NEEDS AND OPPORTUNITIES

To understand the performance and benefits of the 2021 Regional Plan, we focused on access, or the ability of people to use the transportation system to travel to a destination. The current transportation system is well-built to provide accessibility by car; however, the 2021 Regional Plan expands the system to provide people with other travel options. The 2021 Regional Plan focuses on access (measured by time) to different types of destinations, some defined as basic needs and others as opportunities. Figure 2.10 shows the percent of regionwide population with access to basic needs and opportunities for 2016 and milestone years of 2035 and 2050.

- **Access to Basic Needs:** Some destinations, such as shopping, open space, and healthcare, are necessities. The 2021 Regional Plan improves access to all these necessities regionwide and within Mobility Hubs by offering people access to transit, bicycle infrastructure, and other modes of micromobility.
- **Access to Opportunities:** Access to regional employment centers and higher education is also an important function of the transportation system because this access helps people advance economically. The 2021 Regional Plan dramatically increases the percentage of people regionwide that can access these areas by transit. With the 2021 Regional Plan, the percentage of the region's population that can access Tier 1 employment centers (highest employment concentrations containing more than 20% of the region's jobs) within 30 minutes using transit will grow from 21% today to 36% in 2050. The percentage that can access these employment centers within 45 minutes using transit will grow from 37% today to 58% by 2050.

**Figure 2.10**  
**Access to Basic Needs and Opportunities via Transit (% regionwide population):**



Note: Tier 2 Employment Centers consist of the second highest employment concentrations containing approximately 20% of the region's jobs.

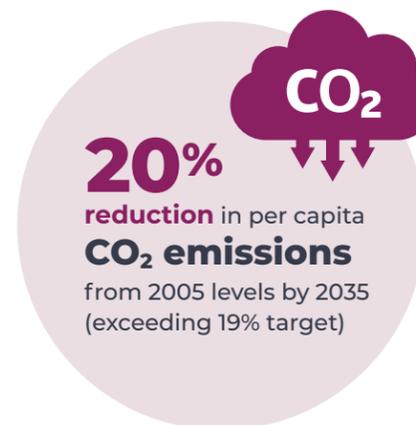
## Regional Plan Performance Measures

The technical methodology for the Performance Measures and results are contained in **Appendix T**.

- **Access to Basic Needs:** the ability of people to use various modes of transportation to access shopping, open space, and healthcare.
- **Access to Opportunities via Transit:** the ability of people to access regional employment centers and higher education via transit.
- **GHG Emissions:** the degree to which the 2021 Regional Plan meets state-mandated targets for reducing GHG emissions.

## GREENHOUSE GAS EMISSIONS

Vehicles traveling on our public roadways are significant contributors to GHG emissions. Several efforts are underway to reduce GHG emissions regionwide. One of the requirements of the 2021 Regional Plan is to reduce GHG emissions from passenger vehicles. Unlike the other performance areas, GHG emission reductions under SB 375 have a required target. For the San Diego region, the 2035 target is a 19% per capita reduction in GHG emissions compared with 2005 emissions. The 2021 Regional Plan achieves this target with a reduction of 20% per capita.



## SOCIAL EQUITY ANALYSIS

A critical component of reviewing the impacts of the 2021 Regional Plan is evaluating the effects on historically underserved and systemically marginalized groups. This evaluation is known as a social equity analysis and focuses on communities of color, residents with low incomes, and seniors. While the 2021 Regional Plan delivers improvements to the entire region, this review ensures that the benefits are shared by everyone and that the burdens of the 2021 Regional Plan's changes are not disproportionately shouldered by any social equity focus population.

The social equity analysis confirms there is no disparity with the distribution of benefits from the 2021 Regional Plan between social equity focus populations and non-social equity focus populations. Where differences do exist, they are small—within 3%—and favor the social equity focus populations. An increase in access to destinations by transit for social equity focus populations is a particular strength of the 2021 Regional Plan.

Thirty-minute transit access to Tier 1 employment centers increases from 22% to 36% for minorities and increases from 25% to 42% for residents with low incomes by 2050. This improvement will provide important economic opportunities to these communities. Convenient transit access to higher education is also crucial for historically underserved and systemically marginalized groups. By 2050, the percentage of minorities and residents with low incomes that can access higher education within 30 minutes by transit increases by 10% or more regionwide. Similar improvements are also found in 15-minute access to retail via transit. All social equity focus populations gain significant access to destinations regionwide. Seniors living near transit grows by more than 25% by 2050.

See **Appendix H** for more information on the Social Equity Engagement and Analysis.